DEVELOPING AND EVALUATING A SOCIAL SKILLS TRAINING PROGRAM TO ADDRESS AGGRESSION IN YOUNG MEN WITH INTELLECTUAL DEVELOPMENTAL DISABILITIES

BY

Bettina M. Casas

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Jan B. Sheldon, Co-chair

_____
James A. Sherman, Co-chair

_____
Diane Bannerman-Juracek, Committee Member

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The thesis committee for Bettina M. Casas certifies
that this is the approved Version of the following thesis:

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Jan B. Sheldon, Co-chair

_____
James A. Sherman, Co-chair

_____
Diane Bannerman-Juracek, Committee Member

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ABSTRACT

A social skills training program to address aggression in young men with intellectual developmental disabilities was developed and evaluated for this study. Participants in the research study were three young men with a diagnosis of mild intellectual developmental disabilities who lived in a community-based residential program. Anger-management techniques and social skills were taught utilizing a multiple baseline across skills for each of the participants. Skills were individually taught in anger-producing scenarios in the men's environment. Teaching the skills involved stating rationales for the skill steps, modeling, and practicing the skills using role-play situations. A chaining procedure for each skill step was used to program for success. The results were that all three of the young men were able to perform the targeted skills at 100% criterion in role-play situations.

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Introduction

Uncontrolled anger and aggression are common problems among adolescents and young adults with intellectual disabilities (Taylor, 2002). Many of these young men and women have such difficulty controlling anger and aggression that they may be placed in more restrictive classrooms, outside of their home in residential programs, inpatient treatment facilities, and/or may be unable to work in community settings. A variety of interventions are described in the literature to address anger and aggression in people with disabilities including cognitive behavioral therapy (Golden & Consorte, 1982; King, Lancaster, Wynne, Nettleton, & Davis, 1999; Benson & Fuchs, 1999; Howells, Rogers, & Wilcock, 2000), social skills training (Gellar, Wildman, Kelly, & Laughlin, 1980; Castles & Glass, 1986; Duncan, Matson, Bamburg, Cherry, & Buckley, 1999), controlling contingencies (Dura, J., 1991; LeBlanc, Hagopian & Maglieri, 2000), anger management techniques such as relaxation skills (Benson, Rice, & Miranti, 1986; McPhail & Chamove, 1989; Nezu, Nezu, & Arean, 1991; Kellner & Tutin, 1995; Lindsey, Allan, MacLeod, Smart, & Smith, 2003; Lindsay, Allan, MacLeod, Cottrell, & Smith, 2004), multi-component treatments (Harvey, Karan, Bhargava & Morehouse, 1978; Taylor & Novaco, 2005), and interventions based on functional assessment/analysis (Iwata, Dorsey, Slifer, Bauman, & Richman,

1982/1994; Thompson, Fisher, Piazza, & Kuhn, 1998; Kahng, Abt, & Schonbachler, 2001; Bailey, McComas, Benavidas, & Lovascz, 2002).

Cognitive Behavior Therapy

Cognitive behavior therapy is one of the most frequently used interventions for a variety of problems, including anger and aggression, for people without intellectual disabilities (Sturmey, 2004). The components of this therapy include recognition of physiological signs of anger, visualization of anger-producing situations, thought-stopping procedures, cognitive restructuring, learning functional alternatives to problem behavior, self-instruction, and problem solving (Sturmey, 2004; Whitaker, 2001). Many of these components include cognitive processes that people with intellectual developmental disabilities may not be able to comprehend and perform (Sturmey, 2004; Whitaker, 2001). Some researchers, however, have investigated the use of cognitive behavior therapy with people with intellectual and developmental disabilities. The majority of studies often include a combination of cognitive behavior therapy components, such as learning the physiological signs of anger and functional alternatives to aggression (Howells, Rogers, & Wilcock, 2000), abbreviated progressive relaxation and coping statements (King, et al, 1999), and relaxation skills and biofeedback (Golden & Consorte, 1982), with other treatments including cognitive restructuring, belief testing, and self-monitoring (Taylor & Novaco, 2005). Frequently, the intervention occurs in a group, and dependent measures often are in the form of behavior rating scales.

Howells, Rogers, & Wilcock (2000) conducted a study that used cognitive behavior therapy as an intervention for anger reduction for people with intellectual developmental disabilities. They utilized a group therapy format and taught five participants, whose IQs were in the 60s, a variety of skills to manage anger. Sessions addressed learning the physiological signs of anger, recognizing emotional states in others, identifying triggers for anger, discussing possible consequences for behavior, and learning social skills such as verbal assertion skills, negotiation skills, and social problem-solving skills using role-play scenarios. The authors attempted to take frequency data on anger outbursts throughout the day but did not report these data due to some concerns regarding reliability of third-party reports. Two self-report behavior rating scales, the Rosenberg Self-Esteem Inventory and the Hospital Anxiety and Depression Scale (using the anxiety portion only), were used to assess changes in behavior. Measures were taken pre-intervention, mid-intervention, and post-intervention. Visual inspection of ratings presented in tabular form showed variability in improvement among participants with little changes in rating scale measures overall; no additional data were reported.

Social Skills Training

The lack of appropriate social skills may be related to an increased probability of engaging in anger outbursts and aggression. Duncan, Matson, Bamburg, Cherry, & Buckley (1999) reported that men and women with intellectual developmental disabilities who exhibit aggressive or self-injurious behavior or both displayed fewer appropriate social skills than similarly able peers who do not display problem

behaviors. Although causation cannot be inferred, the correlation between the two may indicate that people with intellectual developmental disabilities use aggression in place of appropriate social skills. Additionally, Allen (2000) indicated that a variety of skill deficits including limitations in communication skills, social skills, and general independent functioning may increase the probability of aggression.

Social skills training may be a useful tool to teach a variety of skills that will help a person with intellectual developmental disabilities function more effectively in his or her environment. Gellar, Wildman, Kelly, and Laughlin (1980) showed that assertive and positive prosocial skills can be taught to an adolescent with developmental disabilities. A sixteen-year-old woman with a diagnosis of mild intellectual developmental disabilities was the participant in the study. Although she did not display aggressive behavior, she did display behaviors such as crying, saying nothing, or running away when peers interacted with her. Behavioral rehearsal using role-play scenarios and self-observation (through videotapes of her role-plays) were utilized to teach assertive social responses when a peer made an unreasonable request or made fun of her and also how to respond when a peer made a prosocial or positive attempt to interact with her. A multiple-baseline across social skills was utilized to assess the effectiveness of social skills training. All social skills, including both skill specific behaviors and general assertiveness skills, were rated based on their appropriateness to the situation presented. Results showed that an increase in performance of these behaviors occurred only after training took place. Therefore, the method of behavioral rehearsal with feedback was effective in teaching social

skills to an adolescent with a mild developmental disability. Generalization to untrained scenarios occurred only within the general assertiveness skills, whereas more skill specific behaviors did not generalize.

Controlling Contingencies

Controlling contingencies is one of the earliest interventions for changing problem behavior in people with intellectual developmental disabilities. Differential reinforcement of other behavior (DRO) has been a common treatment for people with intellectual developmental disabilities in the literature (e.g. Kahng, Abt, & Schonbachler, 2001). LeBlanc, Hagopian, and Maglieri (2000) utilized a token economy to decrease inappropriate social behaviors in a 26-year-old man with a diagnosis of moderate intellectual developmental disabilities. A single subject multiple-baseline across behaviors design was used to assess a DRO procedure together with a response-cost procedure in reducing inappropriate social interactions, inappropriate sexual behavior, and verbal aggression. Baseline included a dense schedule of non-contingent attention with additional attention for social interactions while target behaviors were ignored. The participant was introduced to the use of a token economy followed by the intervention with response cost. Several sessions were conducted each day in the living area with only the staff person and data collectors present and were 10 minutes in length. Use of the token economy (DRO plus response cost) led to a 97% reduction in verbal aggression and inappropriate sexual behavior and a 99% reduction in inappropriate social interactions. The multiple-baseline design indicated that no changes occurred in the behavior until the

intervention was implemented for that particular behavior. In addition, the schedule was thinned to a 10-min DRO which was determined by his parents to be manageable in a natural setting for maintenance and generalization. Follow-up in the natural setting showed a maintaining level of a 90% reduction in problem behavior.

Relaxation Skills

Many anger management programs include a relaxation skills training component which has been useful for reducing anger in people without disabilities but, unfortunately, has not been studied extensively with people with intellectual developmental disabilities. McPhail and Chamove (1989) evaluated the use of Abbreviated Progressive Relaxation (APR) with men and women with disabilities ranging from mild to profound who lived in the community and attended a day work program. Relaxation training consisted of four training sessions per week over a three-week period. The main components of APR included simple instructions, observing behavior such as breathing rates or muscle tension, and modeling and manual prompts when necessary to flex and relax certain muscle groups. Disruptive behaviors were: 1) “aggressive” which included kicking, biting, threats, and hitting objects; 2) “verbal” which included shouting, swearing, or interrupting the instructor; 3) “movement” which included pacing, agitation, or restlessness; and 4) “other” which included refusal to work, distracting other group members, or crying. Researchers recorded disruptive behaviors following treatment sessions during 45-min observation periods. Teachers in the participants’ environment (who were blind to the participant’s treatment group) recorded the daily level of disruptive behavior

using a 10-point rating scale ranging from “not disruptive” to “extremely disruptive”. A control and treatment group design was utilized, with the control group being read a story while the treatment group received relaxation training. A 10-item behavior rating scale with items such as breathing rate or other observable indications of tension/relaxation was used during training to assess the relaxation level of participants.

Results indicated a statistically significant difference between the control and treatment groups in regards to total disruptive behavior, with the most significant difference occurring in aggressive and verbal disruptive behaviors. The study showed that relaxation training alone, tailored for use with people with intellectual developmental disabilities, can be useful on a short term basis. Unfortunately, all disruptive behaviors returned to baseline levels at three-month follow-up, possibly because no relaxation training was conducted outside of the sessions.

Multi-component Treatments

Multi-component approaches including some combination of cognitive behavioral therapy, anger management/relaxation training, social skills training and/or various methods of controlling contingencies have been frequently used with people with intellectual developmental disabilities to address the complex nature of aggressive behavior. Harvey, Karan, Bhargava, and Morehouse (1978) utilized a multi-component design that included time-out, a token economy, relaxation training, and cognitive behavioral techniques including replacing negative self statements with positive self-statements and describing relaxed state. This early study included one

38-year-old female participant with an intellectual developmental disability who had a history of outbursts that occurred up to three times per week and included yelling, screaming, hitting staff and peers, and throwing objects. Prior to this study, suspension from work had been the consequence for her behavior and she was in danger of losing her job since the intensity and frequency of these outbursts continued to increase.

The authors used a single-subject multiple baseline across settings design, and the results indicated that the multi-component package decreased the aggressive outbursts at work from up to three times per week to zero outbursts, and there was a reduction in outbursts in her home setting only following intervention. It is unclear which portion of the intervention contributed to the change in behavior since all occurred simultaneously and no component analysis was done, but a six-week follow-up in which no temper outbursts occurred suggests that a treatment package can be helpful when addressing aggressive behavior.

Functional Assessment/Analysis

Functional analysis has shown to be a powerful tool to begin planning a treatment program for behavior disorders (Hanley, Iwata, & McCord, 2003). Kahng, Abt, and Schonbachler (2001) utilized a functional analysis to determine the best treatment for a low-rate, high-intensity aggressive behavior in an adolescent female with a diagnosis of profound intellectual developmental disabilities. Frequency data on aggression was taken in 30-min intervals on weekdays from 9 a.m. to 4 p.m. by direct care staff and behavior therapists. The functional analysis was conducted

during her daily routine and indicated that aggressive behavior was attention motivated. Treatment was a variable momentary differential reinforcement of other behavior (DRO) with the average interval being 15 minutes. Results indicated an 81% decrease in aggression from baseline.

In the present study, the author attempted to develop an effective program to address anger management in three young men with mild intellectual developmental disabilities who were living in a community residential setting. Behavioral questionnaires and interviews were used to determine the possible situations where the participants displayed anger and then a multi-component intervention was used to teach relaxation, decrease anger, and teach appropriate social skills that could be used in anger-producing situations.

Method

Participants

Participants were three males living in a four-person residential placement in a community program serving over three hundred people with developmental disabilities. All three of the young men were in the residential program due to aggressive behavior at home, although each young man spent some weekends at home with his family. Participants were selected based on being a young adult (i.e., under the age of 30) with an intellectual developmental disability who exhibited verbal aggression, physical aggression, and/or property destruction several times per week in the residential placement.

Billy was a 16-year-old male with a diagnosis of mild intellectual developmental disabilities and autism. He had additional diagnoses of attention deficit/hyperactivity disorder and bipolar disorder. Billy's parents placed him in the residential program due to their inability to deal with his aggressive behaviors in their home. While at home, he engaged in physical aggression directed at both parents and his younger brother, property destruction of items in his home, and verbal aggression in the form of threats. Although he would threaten physical aggression and was involved in some property destruction in his residential placement, verbal aggression comprised the majority of his problem behavior.

Roy was a 26-year-old male with a diagnosis of mild intellectual developmental disabilities and intermittent explosive disorder. Roy's behaviors include physical aggression in the form of punching, kicking, pinching, and minimal property destruction. Roy also frequently engaged in verbal aggression in the form of name calling and threats of physical violence. Aggression was directed at both staff and peers. Verbal aggression often preceded physical aggression. His parents sometimes took him home as a consequence for frequent aggressive behavior in the residential placement or at the sheltered workshop where he was employed.

Randy was a 23-year-old male with a diagnosis of mild intellectual developmental disabilities and autism. He had an additional diagnosis of obsessive compulsive disorder and intermittent explosive disorder. Randy engaged in physical aggression directed mostly at staff that included hitting, kicking, pushing, and throwing furniture. He aggressed toward peers who were less able to defend

themselves, including those who were elderly, had visual impairments, or used wheelchairs. Verbal aggression usually included name calling and threats of physical violence. Randy also engaged in property destruction, including his own property.

Setting

Each of the participants lived in a residential setting. Each home had three or four people with intellectual developmental disabilities living together on one side of a duplex with a couple trained in basic teaching skills and data collection living on the other side. Additional, similarly trained staff aided in the care of the young men during the day program and on weekends. Both Billy's and Roy's instructional sessions were conducted in the kitchen area of the home. Billy had no staff members present in the kitchen, while Roy almost always had at least one member of the couple in the kitchen while his sessions were conducted. Initially, Randy's instructional sessions were conducted at the day center but later occurred in his home either in the kitchen or living area. There was almost always one staff member present during at least some part of the session.

Dependent Variables

The primary dependent measures were the participants' performance of social skills in role-play situations conducted during teaching sessions. Social skills were chosen and modified for use with participants with intellectual developmental disabilities. Checklists of the skill steps were created to teach and track progress during training sessions (see Appendix 1 for checklists). Performance of each skill

step was recorded by the researcher on a 3-point scale with “0” being “did not occur,” “1” being “attempted,” and “2” “occurred”.

Interobserver reliability was taken during trials for only Roy and Randy. Home staff members served as reliability observers. They were taught to record behaviors by participating in role-plays with the researcher and recording the researcher’s behavior during sample anger-producing scenarios. This training continued until the staff member reached 85% reliability with the researcher. After this criterion was reached, the staff member independently scored role-play situations between the researcher and participant. During the role-plays, the researcher also recorded the participant’s behavior. Reliability measures were collected during 12% of the role-plays during the teaching sessions for Roy and 16% for Randy. The agreements between the researcher and the reliability observer were calculated for each step of the social skill being taught. If the two observers agreed on the scores of the step as “0”, “1”, or “2” it was counted as an agreement. If the two scores were not the same, it was counted as a disagreement. Reliability was calculated as agreements divided by agreements plus disagreements for each step. For Roy, the two observers agreed on 91% of the scores. For Randy, the two observers agreed on 81% of the scores.

Additional dependent measures included the daily occurrence of physical aggression, verbal aggression and property destruction in the participants’ homes as recorded by staff members who were responsible for the participants. “Physical aggression” was defined as any time the person hit, slapped, punched, bit, spit on,

pushed, tripped, scratched, pinched, choked, pulled, grabbed, or forcefully squeezed the body parts of another person. "Verbal aggression" was defined as anytime the person made threats, stated curse words, or used an elevated tone of voice. "Property destruction" was defined as anytime the person threw or broke furniture or other objects, defaced property, or slammed materials. Reliability measures were also taken on verbal and physical aggression in the home for all three participants. Staff members recorded aggression data on a daily basis and the researcher took reliability data on aggression while in the home. Non-occurrence reliability between the researcher and staff members was extremely high (close to 100% for all participants). Randy, however, never displayed aggression while the researcher was in the home. Billy and Roy, however, displayed aggression during three times that the researcher was in the home. During these times, the reliability between researcher and staff members was 35% on the number of aggressions with Billy and 22% with Roy. Thus, the agreement was very low.

Independent Variables

All participants were involved in basic anger management training. All anger management skills were the same for each participant and were taught in the context of the low, medium, and high intensity anger-producing situations. In addition, each participant was taught three individual social skills selected on the basis of interviews of participants and significant others in their environment. Skills were prioritized so that skills associated with low intensity anger-producing situations were taught first, followed by skills associated with medium, then high intensity anger- producing

situations. Low intensity anger-producing situations were those associated with verbal aggression only. Medium intensity anger-producing situations were those associated with verbal aggression and some physical aggression. High intensity anger-producing social skills were those associated with verbal aggression and physical aggression and carried a likelihood of property destruction. Billy's skills consisted of "What to Do If Somebody Takes Something Away from You," "Following Instructions," and "Accepting No". Roy's skills consisted of "Conversation," "Following Instructions," and "Accepting No". Randy's skills consisted of "Waiting for Attention," "How to Make a Phone Call When There Is No Answer," and "Accepting No". The skill steps for each of these skills are listed in Appendix 1.

Procedure

Prior to skills being selected, a behavioral questionnaire was provided to pertinent people in the participant's environment including parents, teachers, and staff members to help determine what consequences seemed to maintain the participant's problem behaviors. When a hypothesis regarding the likely consequences was determined, the same people were interviewed in regards to possible social skill needs. The young men were also involved in an informal interview regarding situations that upset them and asked to explain possible causes for this. The information from the behavioral questionnaires and interviews for all participants identified the situations that were most likely to elicit aggression and was taken into account when selecting appropriate social skills for each of the participants.

Each participant was first taught basic anger control skills (see Appendix 1). Participants were taught to identify anger-producing situations, or triggers, in their environment. The researcher asked the participant what things make him angry or upset. If staff or parents identified other triggers, the researcher asked the participant whether these situations also upset him. After triggers were identified, the participant was asked how his body felt when he was angry to aid in identifying physiological signs of anger such as muscle tightening, labored breathing, butterflies in the stomach, et cetera. If the participant could not identify physiological signs, the researcher asked them to physically engage in the behavior to help identify if that behavior felt like anger.

Skills were taught according to a modified version of ASSET (Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1980). Each skill step was taught individually. After the step was read, the participant was asked for a rationale for using that skill step. Verbal praise was given for correct answers. If the participant could not identify a rationale, the researcher provided a rationale. The skill step was then modeled for the participant. The participant was then asked to perform the skill step within the context of a role-play scenario. Each skill step was to be performed at 100% criterion three times in a row before the next skill step could be learned. A chaining procedure was used to aid the participant in displaying all of the skill steps (Defalco, 1986). Once one skill step had been displayed at 100% criterion for three consecutive trials, a second step was taught. Once the second step was displayed at 100% criterion for three consecutive steps, the participant was asked to perform step

one and two together. Once the two steps were performed at the 100% criterion level for three consecutive trials, step three was taught, and so on until all the skill steps had been taught.

Anger-management skills were taught first, which later became part of the "previously taught" skill steps that were taught after the anger-management skills had been mastered (Keeling, 2006). Anger management skills were taught using scenarios that represented situations that were low, medium, and high intensity. At each level, participants had to perform all of the anger control steps correctly for three consecutive role-plays. Once the anger control skills met the intensity criterion, the individual social skills were taught one at a time.

Experimental Design

A multiple baseline across skills design (Baer, Wolf, and Risley, 1968) was used to evaluate the effectiveness of the social skills training procedure. Participants were pretested during a baseline condition to determine their ability to correctly display their targeted social skills in role-play situations. Anger control skills were then taught. Once criterion performance for the anger control skill was met, participants were tested again on their ability to display all of their individually targeted social skills. Teaching then began for the first of three individually targeted social skills. When criterion performance for the first individually targeted social skill was demonstrated in the role-play situations, participants were retested on their ability to display all of their individually targeted social skills. Then teaching began for the second individually targeted social skill. When criterion performance for the second

individually targeted social skill was demonstrated in the role-play situations, participants were retested on their ability to display all of their individually targeted social skills. Finally, the third individually targeted social skill was taught. Thus, teaching of each social skill did not occur until the participant demonstrated criterion performance on the previously taught social skill in the role-play situations.

Results

Figures 1, 2, and 3 show the percent of skills steps on the last role-play of the teaching session that were performed correctly. All of the participants mastered the skills as they were taught. In general, the anger control skills required relatively little time to reach mastery, whereas the individual social skills took more time.

As shown in Figure 1, Billy learned anger control skills in low intensity anger-producing situations after only one teaching session, anger control in medium intensity anger-producing situations after two teaching sessions, and anger control in high intensity anger-producing situations after one teaching session. Billy reached criterion on "Following Instructions" after ten teaching sessions, "What to Do If Somebody Takes Something Away from You" after three teaching sessions, and "Accepting No" after six teaching sessions. As shown in Figure 2, Roy learned anger control skills in low intensity anger-producing situations three sessions, anger control skills to medium intensity anger-producing situations in one session, and anger control skills to high intensity anger-producing situations in one session. Roy reached criterion on "Conversation" after 20 teaching sessions, "Following Instructions" after 11 teachings sessions, and "Accepting No" after 16 teaching

sessions. As shown in Figure 3, Randy learned anger control skills to low intensity anger-producing situations after two teaching sessions, anger control to medium intensity anger producing situations after one teaching session, and anger control to high intensity anger-producing situations after one teaching session. Randy reached criterion on "Waiting for Attention" after four teaching sessions, "How to Make a Phone Call When There Is No Answer" after two sessions, and "Accepting No" after two teaching sessions.

Figures 4 and 5 show the skill steps that were performed correctly across each successive role-plays for Roy and Randy, separated into common skill steps and skill specific steps. This information was not available for Billy. "Previously taught" skill steps were those steps such as making eye contact or having a pleasant facial expression that were skill steps that had been mastered as part of a previously taught skill. "Skill specific" steps were those skill steps that were unique to only one skill or a common step that had not already been mastered as part of a previously taught skill. In these figures, it can be seen that the participants generally displayed high levels of performance on "previously taught" skill steps from the beginning of teaching a new skill, whereas they gradually learned the skill steps that were specific to the new skills being taught.

Table 1 shows the number of role-plays required to reach criterion, which was performance of 100% for three successive role-plays. The data presented in this table indicated that some skills required many more role-plays than did other skills.

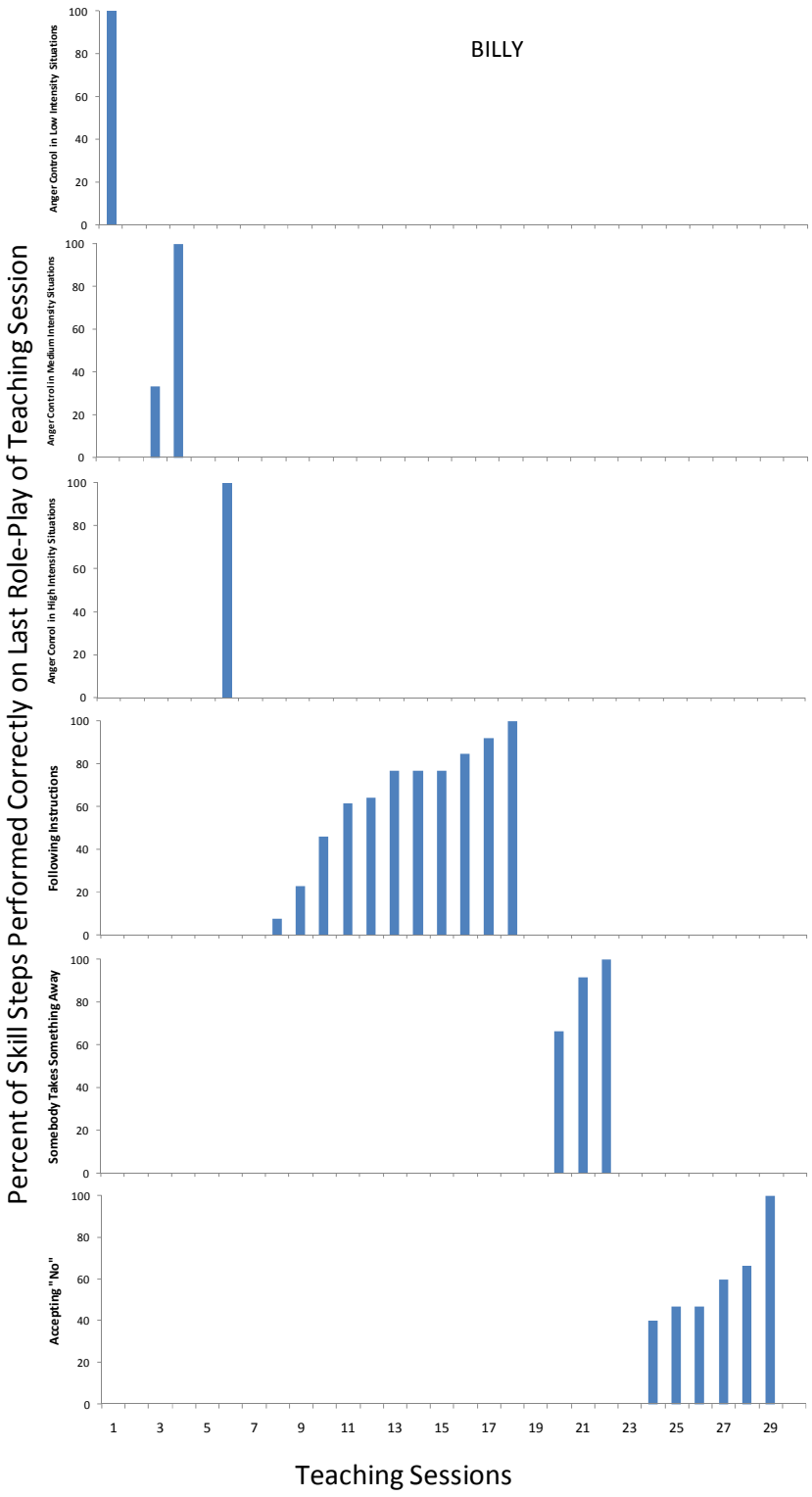

Figure 1: Billy's percent of skill steps performed correctly at end of session.

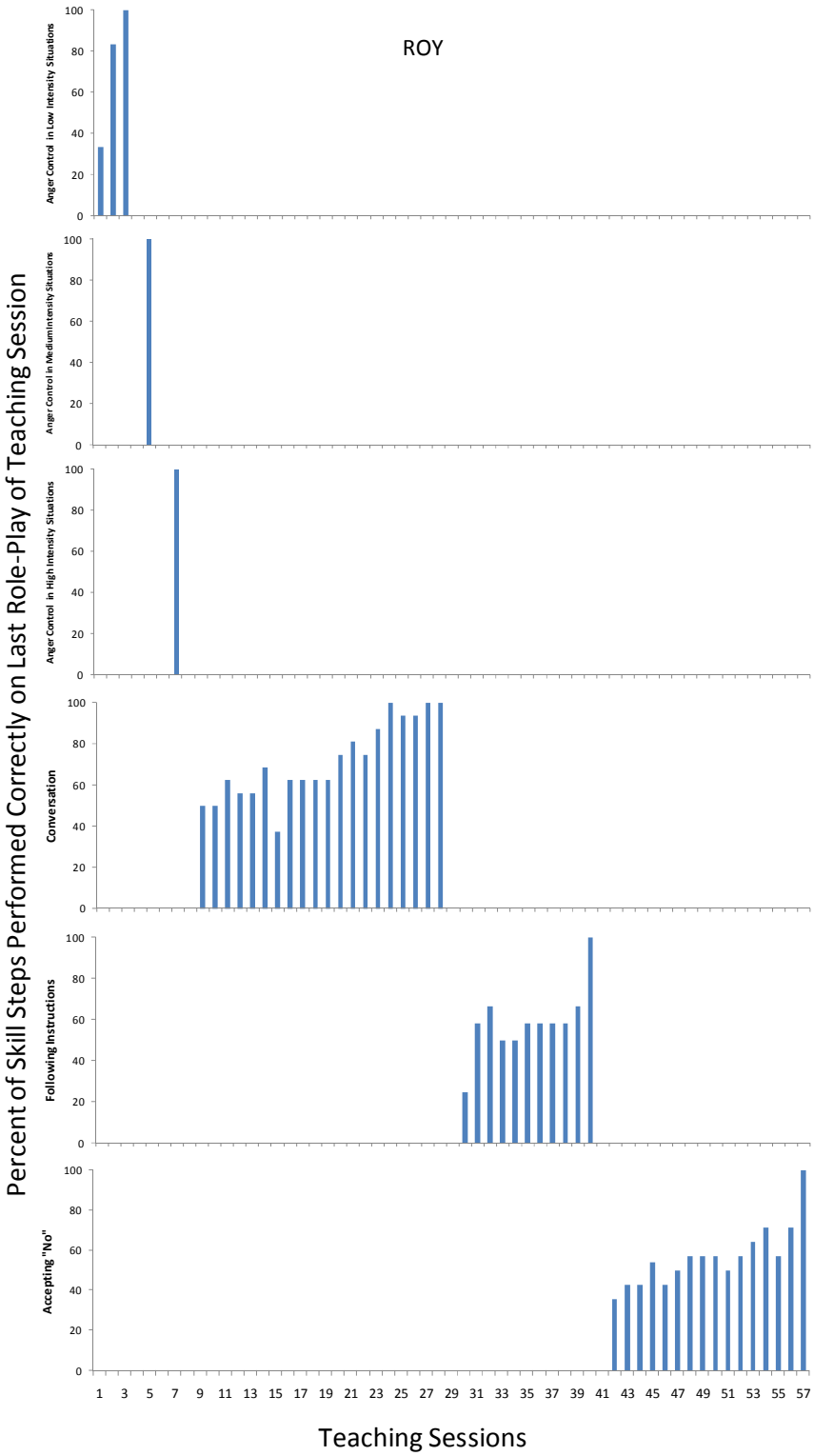

Figure 2: Roy's percent of skill steps performed correctly at end of session.

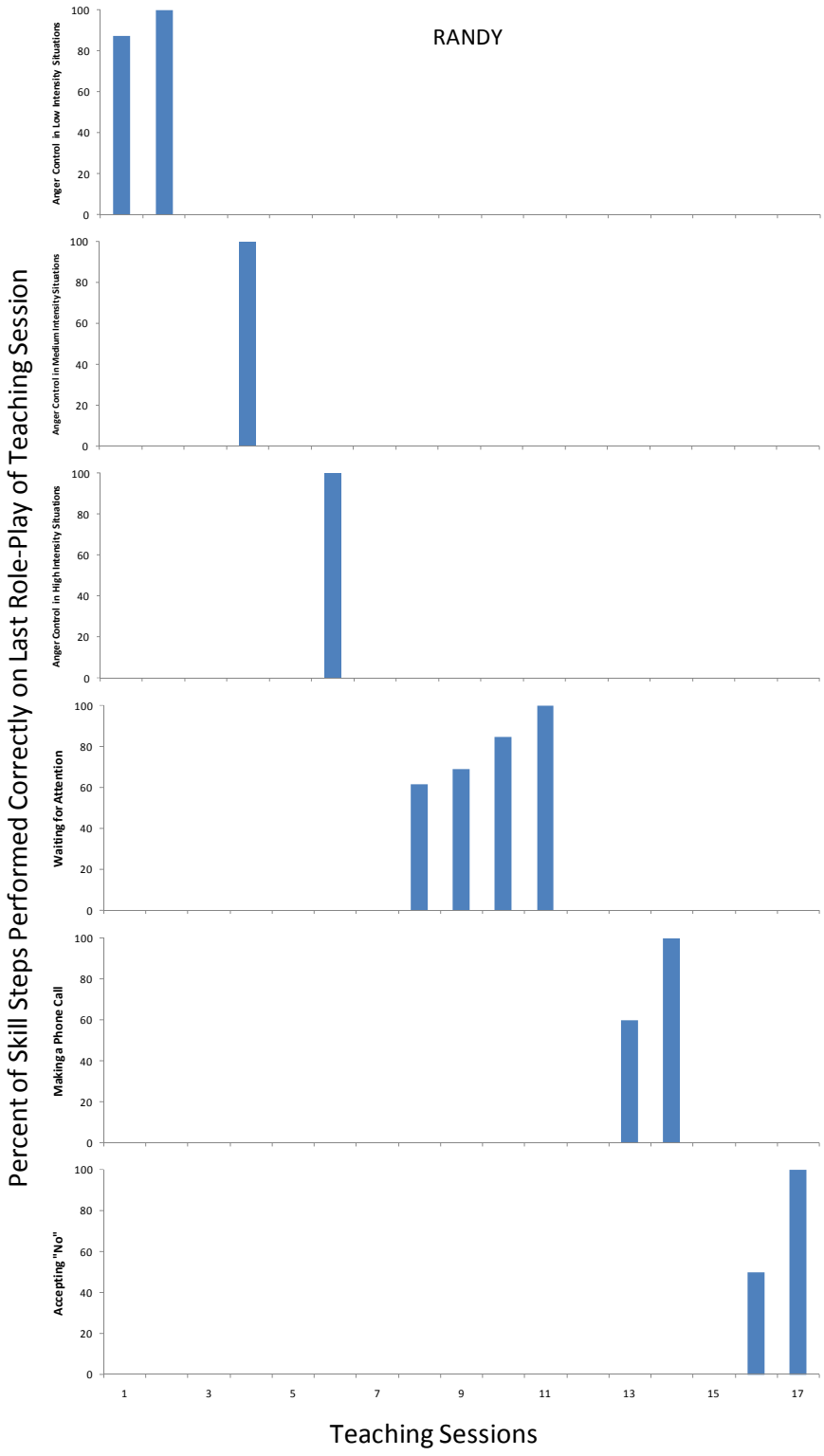

Figure 3: Randy's percent of skill steps performed correctly at end of session.

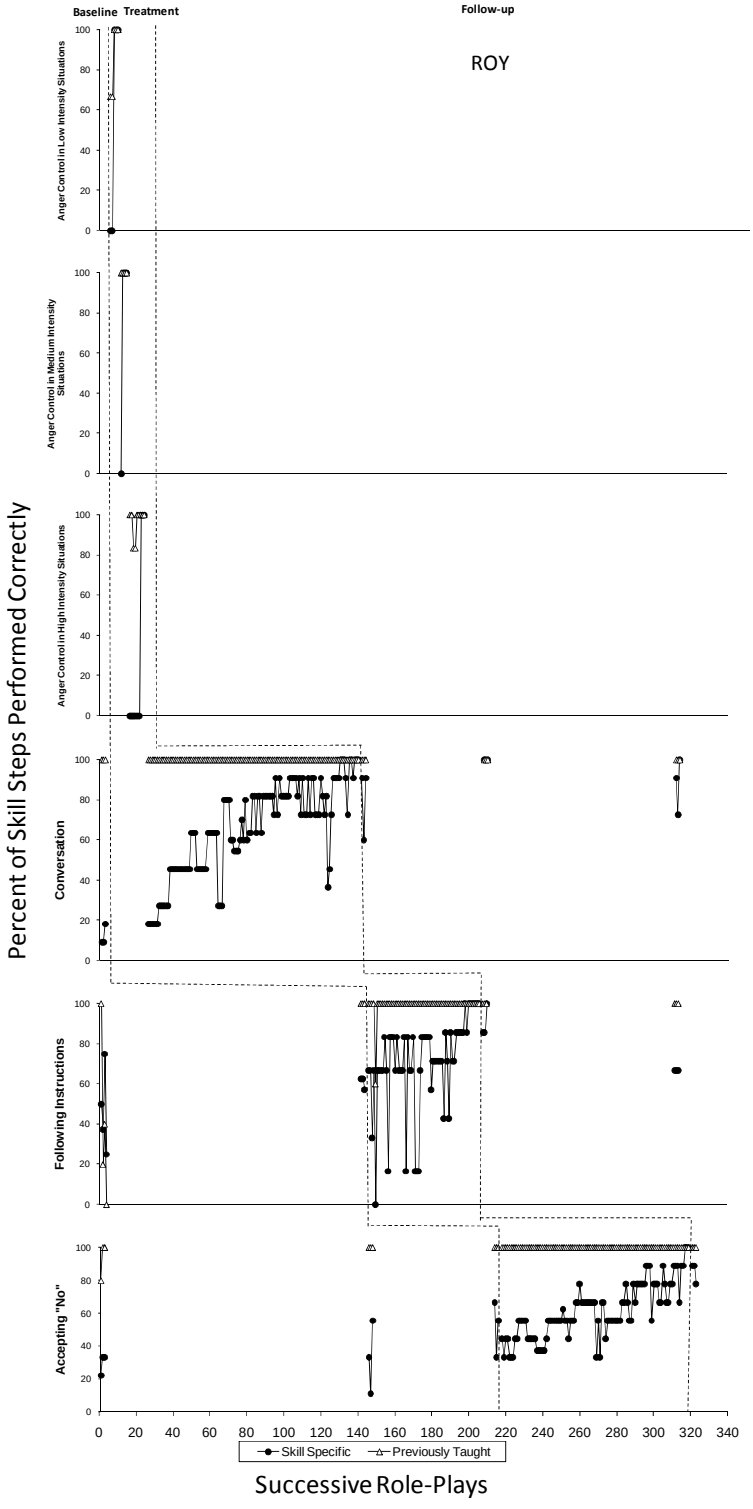

Figure 4: Roy's performance on previously taught and skill specific steps on successive role-plays.

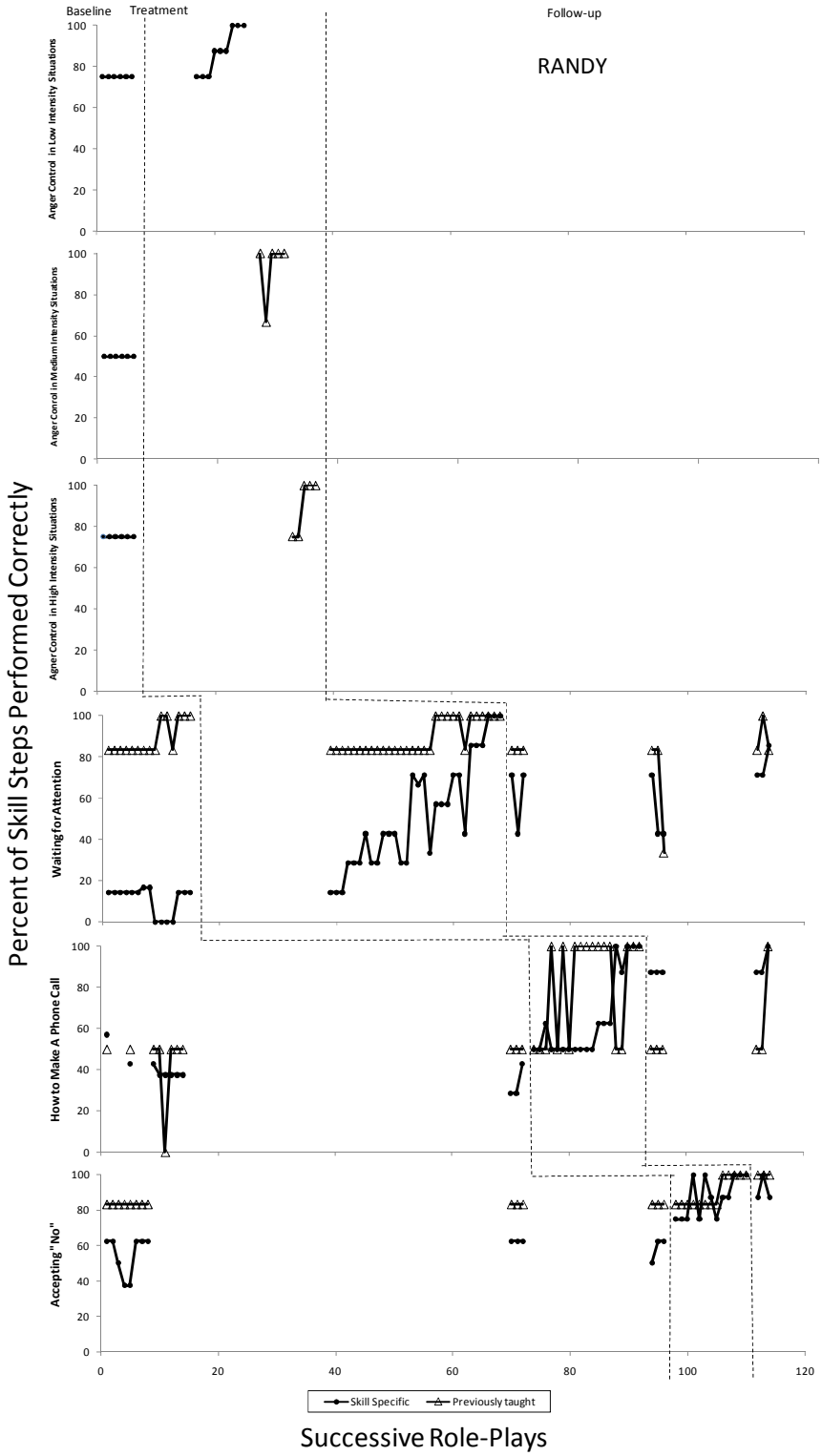

Figure 5: Randy's performance on previously taught and skill specific steps on successive role-plays.

Figures 6, 7, and 8 show the frequency of verbal and physical aggression recorded by in-home staff members. There appears to be no relationship between social skill training and behavior recorded by the staff.

Discussion

The results of this study indicate that participants with mild intellectual developmental disabilities can successfully learn anger control and social skills related to situations that produce anger. In general, the steps in the social skills were learned only after the

steps were taught. In addition, participants were able to perform the skills for several weeks after they were taught. These results are similar to those found by Gellar, et al. (1980) and Castles and Glass (1986).

Unfortunately, teaching social skills in the role-play situations had no clear effects on the amount of aggression that was scored at home for the participants. Thus, it appears that simply teaching social skills was not enough. Only one other study, Howells, Rogers, and Wilcock (2000) attempted to teach social skills and take frequency measures while in the home. They, however, did not report frequency measures as they were deemed unreliable. Other studies that utilized role-play to teach social skills used inventories to determine changes rather than direct measures. There are several possible reasons for the lack of effect of teaching social skills in role-play situations on aggression in the home. First, the reliability of scoring the frequency of aggressive behavior at home was questionable since staff members in the home were often conducting multiple duties at the same time and had difficulty

Table 1: Number of role plays required to reach criterion for each skill

	Anger Control Skills in Low Intensity Situations	*Anger Control Skills in Medium Intensity Situations*	*Anger Control Skills in High Intensity Situations*	*"Conversation"*	*"Following Instructions"*	*"Accepting No"*
Roy	5	4	9	118	64	101

	Anger Control Skills in Low Intensity Situations	*Anger Control Skills in Medium Intensity Situations*	*Anger Control Skills in High Intensity Situations*	*"Waiting for Attention"*	*"How to Make a Phone Call When There Is No Answer"*	*"Accepting No"*
Randy	9	5	5	30	19	13

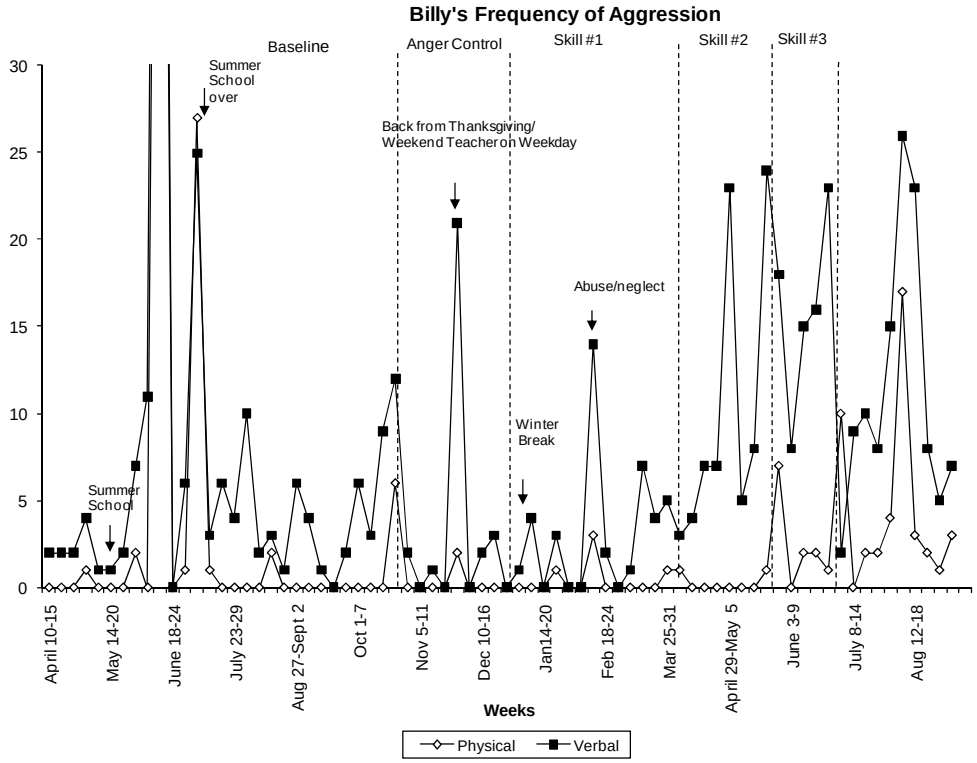

Figure 6: Billy's frequency of aggression as recorded daily by in-home staff.

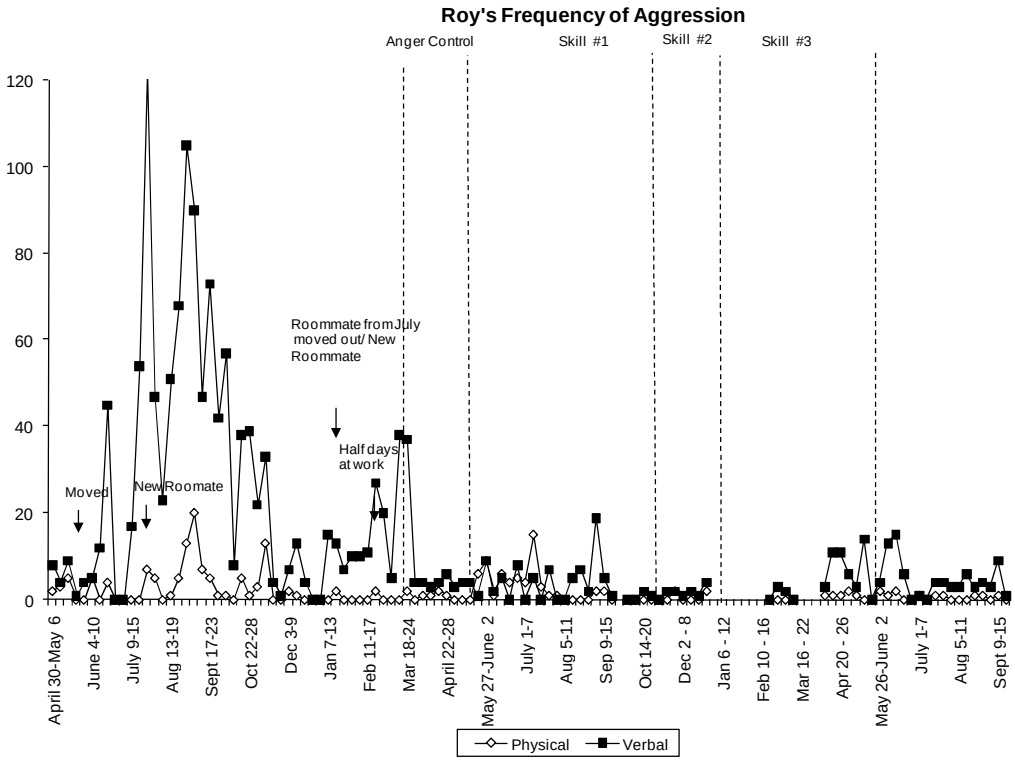

Figure 7: Roy's frequency of aggression as recorded daily by in-home staff.

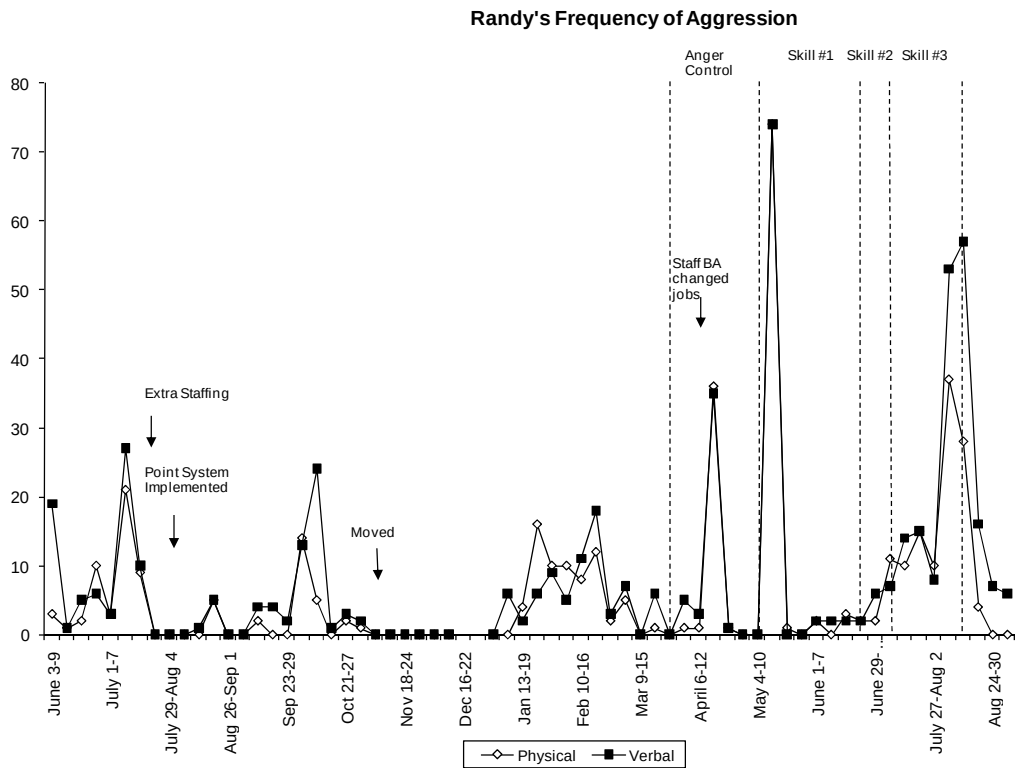

Figure 8: Randy's frequency of aggression as recorded daily by in-home staff.

recording each instance of aggressive behavior while concurrently dealing with the aggressive behavior of a participant. Second, and possible of greater importance, was that the role-play situations, although designed to represent the types of situations that often set the occasion for aggressive behavior, were simply not "realistic" in that the researcher always presented the aggression-producing situations whereas in the real world other people presented situations. Additionally**,** in real life, the aggression-producing situations occurred unpredictably, whereas presentations of role-play situations were very predictable, and, in real life, the variety and intensity of the aggression-producing situations were much greater than those presented in role-play situations. These, and possibly many other characteristics, were discriminatively different between the role-play situations and real-life situations.

Skill training is often suggested by many authors (e.g. Gardner, Cole, Davidson, & Karan, 1986; Taylor, 2002; Whitaker, 1993) as a means to teach alternatives to aggression. In theory, "once the client has gained the skills that enable them to cope with provoking situations, they will have these skills whenever they are required, without the need for external managements" (Whitaker, 2001). Unfortunately, this did not occur. Thus, we need to do more. Certainly, we can attempt to make our role-play situations much more realistic in that they more closely resemble real-life aggression-producing situations in terms of variety, intensity, and unpredictability, and we need to teach the skills for use with a variety of people in a variety of different situations. Ultimately, however, we may need to intervene during real-life interactions to reward appropriate behavior, and we may need to

systematically manipulate the characteristics of aggression-producing situations to gradually increase the difficulty or likely intensity of aggression-producing situations. The latter suggestions seem to be consistent with statements by the American Journal of Mental Retardation (2000) that recommend, among other things, using both procedures of applied behavior analysis and environmental modification for addressing aggression displayed by people with mild/moderate intellectual developmental disabilities.

It is unclear whether teaching social skills affected aggressive behavior in the home. Very few aggressive behaviors occurred while the researcher was in the home. It should be noted that the researcher was not in the home daily and aggressive behavior was an unpredictable, but low probability, behavior for all of the young men. Nevertheless, the researcher spent approximately 88 hours in the homes of the participants during the course of the study and observed 49 instances of aggression occurring on only three visits in the homes across all three participants. There may have been several reasons for this. First, when the researcher was in the home, participants received a great deal of one-on-one attention from the researcher. This may have affected the likelihood of aggression. Second, the researcher may not have presented aggression-producing situations except in the role-play situations. It should be noted, however, that all three participants were likely to display aggression when they were asked to do activities, and there were few instances of aggression toward the researcher despite her repeated requests for the participants to practice skills and participate in role-plays. Third, the researcher spent a significant amount of time in

the homes prior to beginning the research portion, building rapport with each participant by playing games, reading books, drawing pictures, and talking. McLaughlin and Carr (2005) indicate that rapport may be a key factor influencing problem behavior, since good rapport may function as a setting event, and is one of the important components in building a multi-component approach to dealing with aggression.

In view of the lack of effects of social skills training on real-life aggressive behavior of people with mild/moderate intellectual developmental disabilities, it seems clear that a great deal more research needs to be done. Possible directions seem to be teaching appropriate behavior in aggression-producing situations that employ more realistic and unpredictable role-play situations. This may be done by incorporating different people doing the role-plays or engaging in role-play scenarios in a variety of settings, providing substantial consequences for appropriate behavior in situations that have been likely to provoke aggression, modifying the environment to try to reduce the overall frequency of aggression-producing situations, and using relationship development procedures so that at least some of the people who are likely to present aggression-producing situations (e.g., making a request for a person to do a non-preferred task) have already created a positive relationship with the person who is likely to be aggressive.

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Appendix 1

Skill Sheets

Relaxation and Anger Control Checklist

1. Deep breathing.
2. Muscle tightening and relaxing.
3. Use eye contact.
4. Use appropriate voice tone.
5. Only talk about what the person is talking about.
6. Use appropriate facial expression.
7. Be appropriate with body.
8. Keep hands to yourself.

Following Instructions

1. Face the person.
2. Keep eye contact.
3. Keep a normal facial expression.
4. Use a normal voice tone.
5. Stand up straight.
6. **Listen** to the instruction, so you know what to do.
7. Nod your head. Say “okay”.
8. If you do not understand, ask the person to explain.
9. Say that you will follow the instruction.
10. Follow the instruction.
11. Throughout, be polite.
12. Do not argue with the person, follow the instruction and talk to the person later about problems.

What to Do If Somebody Takes Something Away from You

1. Face the person.
2. Keep eye contact.
3. Normal facial expression.
4. Use a calm voice.
5. Stand up straight.
6. Slowly walk up to the person.
7. Ask for the item back. (“May I have back my book please?)
8. Wait for the person to respond.
9. If the person gives it back, say “thank you”.
10. If the person says no, or does not answer, repeat what you said. (“Please may I have it back.”)
11. If the person says no again, walk away.
12. Find an adult who can help you.
13. Calmly tell the adult what happened.

Accepting No

1. Face the person.
2. Keep eye contact.
3. Appropriate facial expression. (calm, no glaring)
4. Use calm voice.
5. Stand up straight.
6. Listen to what the person has to say.
7. If you did not understand why your being told “no”, politely ask for a reason. (For example, “Could you please tell me why you are saying ‘no’?”)
8. If you would like the person to think about changing their answer, calmly give a reason as to why you would like then to allow you to do or have something.
9. Listen to their answer.
10. If the answer is: “yes”, say “thank you”
    “no”, say “Okay, thank you anyway”
    Then walk away.
11. Do not interrupt.
12. Do not cross your arms.
13. Do not put the other person down.
14. Remember to take deep breaths.

Conversation

1. Face the person.
2. Keep eye contact.
3. Smile.
4. Use a pleasant voice tone.
5. Keep a relaxed posture.
6. Greet the person. *Say "Hi"*
7. Introduce yourself (if you do not know the person).
8. Ask a question to get more information. "*How was your day?"*
9. Listen to the answer.
10. Ask another question.
11. Listen to the answer.
12. Ask a third question.
13. Listen to the answer.
14. End the conversation. *"Well, I have to go…"*
15. Don't interrupt.
16. Throughout, give head nods and say "mmhmm" and "yeah"

Waiting For Attention

1. Go up to the person you want to talk to.
2. Face the person.
3. Make eye contact.
4. Have a nice look on your face.
5. Use a calm voice.
6. Stand up straight.
7. Ask the person if you can talk to them for a minute.
8. If the person tells you they are busy, ask when a good time to talk with them would be.
9. Set your timer for the amount of time the person said to wait.
10. Take a few deep breaths.
11. When the timer goes off, go up to the person and ask them to talk with you or do something off of your engagement list.
12. When you are done, say “Thank you for spending time with me.”
13. Look at your engagement and pick something to do independently.

How to Make a Phone Call (No Answer)

1. Look at your call list to find out who to call today.
2. Dial the phone number.
3. While the phone is ringing, take a few deep breaths.
4. Use a calm voice.
5. If the person does not answer the phone, leave a message.
6. Tell the person about your day or what is upsetting you.
7. Ask the person to call you back when they get a chance.
8. Do not call that person back until your next phone time.
9. If you still feel stressed out, you may call another person on your call list.
10. Go back to step one.

Appendix 2

Article Chart

Title	Author	Participants	Setting	Treatment/Intervention	Dependent Variable	Research Design	Measurement	Results/Conclusions
REVIEWS								
Treatment of psychiatric and behavioral problems in mental retardation	*(2000), American Journal of Mental Retardation*							
Recent research on physical aggression in persons with intellectual disability: An overview	Allen (2000), *Journal of Intellectual & Developmental Disabilities*	Label of mental handicap, intellectual disability, or mental retardation	Not specified	Varied: treatment interventions including behavioral & medication and reactive management	Aggression: various operational definitions	Varied	Varied	Need for more effective assessments, combination treatments, social validity measures, and training of caregivers
Functional analysis of problem behavior: A review	Hanley, Iwata, & McCord (2003), *Journal of Applied Behavior Analysis*	People with developmental disabilities	Varied	Functional analysis	Varied	ABC, AB	Varied	Differentiated outcomes in 95.9% of studies
Behavioral treatment of challenging behaviors in individuals with mild mental retardation: Meta-analysis of single-subject research design	Didden, Korzilius, Van Oorsouw & Sturmey (2006), *American Journal on Mental Retardation*	People with mild MR: IQ's between 55 and 75	Varied	Behavioral or psychotherapeutic procedure	Varied	Single subject	Varied	Quantitive analysis of results of single-subject studies
Assessing and treating aggression in children and adolescents with developmental disabilities: A 20-year overview	Matson, Dixon & Matson (2005), *Educational Psychology*	Children or adolescents 0-22 yrs of age and diagnosed with an intellectual or developmental disability	Not specified	Varied	Aggression	Varied	Varied	All treatments in review reduced aggression with most frequently used treatments being FCT and DRO
Cognitive therapy with people with intellectual disabilities: A selective review and critique	Sturmey (2004), *Clinical Psychology and Psychotherapy*	People with intellectual disabilities, IQ not specified	Varied	Cognitive behavior therapy (multi-component packages)	Varied	Varied	Varied	Cognitive behavior therapy can be applied successfully to some problems
A review of the assessment and treatment of anger and aggression in offenders with intellectual disability	Taylor (2002), *Journal of Intellectual Disability Research*	People with intellectual disabilities, IQ not specified	Identified as community or institutional	Varied	Varied	Varied	Varied	People with anger problems and intellectual disability benefit most from relaxation, self monitoring, and skills training through role-play
The reduction of aggression in people with learning disabilities : A review of psychological methods	Whitaker (1993), *British Journal of Clinical Psychology*	People with learning difficulties (IQ less than 70, diagnosis normally associated with learning disability, or description strongly suggested learning disability	Varied	Varied	Aggression: violent acts directed against other people or against property	Atleast AB design	Varied	Most effective methods are behavioral in nature: lack of information regarding community settings or low frequency behaviors
Anger control for people with learning disabilities: A critical review	Whitaker (2001), *Behavioral and Cognitive Psychotherapy*	Individuals with a learning disability	Varied	Contingency management, ecological, positive programming, reactive strategies	Not reported	Varied	Varied, mostly questionnaires and rating scales, studies that included overt anger behavior little or no indication was given regarding how information was obtained or how reliable the data was	Cognitive behavioral training can be effective with people with disabilities, with best supporting evidence for relaxation and self-monitoring

COGNITIVE BEHAVIOR THERAPY								
Anger-arousing situations and coping responses of aggressive adults with intellectual disability	Benson & Fuchs (1999), *Journal of Intellectual and Developmental Disabilities*	68 men and women with intellectual disabilities and aggressive behavior referred by vocational supervisors	Outpatient clinic that offers cognitive behavior therapy	Procedure that used interview process for individuals to identify anger provoking situations and and their responses	N/A	N/A	Statements made by participants	Questionnare helpful to identify problem situations at work
Training mildly retarded individuals to control their anger through the use of cognitive-behavior therapy	Golden & Consorte (1982), *Journal of Contemporary Psychotherapy*	4 adults with MR and anger control problems	not identified	Cognitive behavior therapy and two individuals used biofeedback (Rational emotive therapy, stress inoculation training, relaxation skills)	Number of verbal or physical aggression outbursts	Case study	Role play	Decreased aggression in all participants
Evaluating a cognitive/behavioral approach to teaching anger management skills to adults with learning disabilities	Howells, Rogers & Wilcock (2000), *British Journal of Learning Disabilities*	5 men and women with mild/moderate learning disabilities (all IQ's 69 or below)	Clinical psychology department treatment center	Group therapy for 2 hours weekly for 15 weeks: 1. Information presentation 2. Recognition of emotional states 3. Identify triggers 4. Discussion of consequences of anger 5. Social skill practice and role play	Assessment measures including: Rosenberg Self-esteem inventory, Hospital Anxiety and Depression Scale, self-monitoring, semi-structured interview	pre, mid, post intervention measures	Frequency of aggressive acts not reported	interviews indicated participants felt more in control of their anger
Cognitive-behavioral anger management training for adults with mild intellectual disability	King, Lancaster, Wynne, Nettleton & Davis (1999), *Cognitivie Behaviour Therapy*	11 adults with mild intellectual disabilities (17-48 yrs old)	Medical center	Group therapy 15 90-min sessions(coping statements, APR, problem solving skills)	Assessment measures	Pre, post, 12 week follow-up	Anger inventory for Mentally Retarded Adults, Coppersmith Self-esteem inventory, Anger inventory-caregiver report, Developmental Behavior Checklist	Statistically significant changes in improved anger control and self-esteem measures for 8 of the 11 subjects, strong caregive perceived improvements
SOCIAL SKILLS								
Training in social and interpersonal problem-solving skills for mildly and moderately mentally retarded adults	Castles & Glass (1986), *Catholic University of America*	33 men and women with mild/moderate MR	Vocational training facility	2 sessions/ wk (1hr each), inerpersonal problem solving, social skills training, or combination tx.	Results on assesment measures	Random assisgnment to treatment and control groups	Bialer-Cromwell Children's locus of control scale, AAMD adaptive behavior rating scale, interpersonal self-efficacy scale, social problem solving test, behavioral social skills assessment	Improvement in trained adults in comparison to non-trained control groups in problem solving and social skills
The relationship of self-injurious behavior and aggression to social skills in persons with severe and profound learning disability	Duncan, Matson, Bamburg, Cherry & Buckley (1999), *Research in Developmental Disabilities*	203 individuals with severe and profound MR	Residential state facility	N/A	Six subscales from the MESSIER	Semi-structured interview	Matson Evaluation of Social Skills for Individuals with Severe Retardation (MESSIER)	Individuals rated as aggressive, self-injurious or both displayed lower social skills than controls
Teaching assertive and commendatory social skills to an interpersonally-deficient retarded adolescent	Geller, Wildeman, Kelly & Laughlin (1980), *Journal of Clinical Child Psychology*	16 year old with mild MR	Analogue	Self observation, role play, rehearsal	Performance during role play	Multiple baseline across social skills	Role play steps rated as occurrence or nonoccurance	Increased ability to perform social skills following training

ANGER MANAGEMENT								
Effects of anger management training with mentally retarded adults in group treatment	Benson, Rice, & Miranti (1986) *Journal of Consulting and Clinical Psychology*	54 subjects with mild to moderate mental retardation recruited from vocational training centers		12 weekly 90-minute group therapy sessions	Self-report Anger Inventory, Conflict Situation Test, ratings of a video taped roleplay test, supervisor ratings	Pre-test, post-test, 4-5 week follow up	Self-report Anger Inventory, Conflict Situation Test, ratings of a video taped roleplay test, supervisor ratings	Aggressive gestures decreased
A school-based anger management program for developmentally and emotionally disabled high school students	Kellner & Tutin (1995), *Adolescence*	4 students between 15 and 18 years old with borderline range of intellectual functioning with aggression	Day school	5 weekly group meetings lasting 45 minutes each, identifying anger, roleplays,	N/A (no results were given as to reduction in aggression, only feedback on the program components)	N/A	Hassle log (setting, incident, how handled, degree of anger, how managed)	Anecdotal information that developmentally disabled adolescents and young adults can benefit from anger management training in a group setting
Anger and aggression in people with intellectual disabilities: treatment and follow-up of consecutive referrals and a waiting list comparison	Lindsay, Allan, Parry, MacLeod, Cottrell, Overend & Smith (2004), *Clinical Psychology and Psychotherapy*	33 treatment & 14 control with IQ's averaging in the mid 60's	Article does not indicate where these sessions were held	40 weekly group sessions of anger management treatment	Aggressive incidents (offenses and re-offences)	Assessed pre-treatment, treatment, and 3 month follow-up; pre-treatment and post-treatment role plays and self-report diaries	Dundee Provocation Inventory, anger provoking roleplays, and daily reports of anger	Statisitically significant differences in pre- and post-tx for tx group and between tx and control group
Long-term treatment and management of violent tendencies of men with intellectual disabilities convicted of assault	Lindsay, Allan, MacLeod, Smart, & Smith (2003), *Mental Retardation*	6 men with IQ's less than 70 (64,65,69,70), convicted in an adult court of assault related offenses	Outpatient treatment facility	Weekly sessions over 9 months, relaxation/arousal/reduction stage, group discussion, role-plays	Reoffending rates	Case study	Anger inventory, anger provoking role-play, self reports of anger, information related to reoffending rates	Decrease in feelings of anger (reduction in measures on anger inventory), lowered aggression during role plays, none reoffended after three years
Relaxation reduces disruption in mentally handicapped adults	McPhail & Chamove (1989), *Journal of Mental Deficiency*	12 adults with disruptive behavior, profound to mild mental deficiency, no IQ given	Adult training center	Abbreviated progressive relaxation	Disruptive behavior	Experimental/ control	10 items on a behavior rating scale	Decrease in verbal and physical aggression
Assertiveness and problem-solving training for mildly mentally retarded persons with dual diagnosis	Nezu, Nezu & Arean (1991), *Research in Developmental Disabilities*	28 men and women between the ages of 22 and 53 diagnosed with mild MR and a mental health diagnosis	Oupatient medical-school affiliated clinic	Assertiveness training, social problem-solving training	ABS-R, Brief symptom inventory (BSI), problem solving task, role-play test, subjective units of distress scale	Random assignment to treatment (assertiveness then problem solving and problem solving then assertiveness) and control conditions (wait list)	Pre-treatment, midphase, and post-treatment measures	Decrease in distress, increase in assertive behavior, increase in problem solving effectiveness, problem solving and assertiveness both useful as clinical tx.

CONTROLLING CONTINGENCIES								
Controlling extremely dangerous aggressive outbursts when functional assessment fails	Dura (1991), *Psychological Reports*	11 year old female with severe MR	Residential setting	DRO with verbal praise, tactile stimulation for toy touching, consequence of verbal warning followed by graduated restraint	Acts of aggression	Multiple baseline across treatments	Frequency of aggressive acts	Aggressive acts decreased to zero
Use of a token economy to eliminate excessive inappropriate social behavior in an adult with developmental disabilities	LeBlanc, Hagopian & Maglieri (2000), *Behavioral Interventions*	26 year old male with moderate MR	Inpatient hospital	Token economy with response cost (DRO based)	Inappropriate social interactions, inappropriate sexual behavior, and verbal aggression	Multiple baseline across behaviors	Frequency of behaviors during treatment sessions	97% reduction in verbal aggression, 99% reductionin inappropriate social interactions, 97% reduction in inappropriate sexual behavior
COMBINATION TX								
Relaxation training and cognitive behavioral procedures to reduce violent temper outbursts in a moderately retarded woman	Harvey, Karan, Bhargava & Morehouse (1978), *Journal of Behaviour Therapy and Experimental Psychology*	A 38-year old woman with MR	Sheltered workshop and nursing home	Rrelaxation training, cognitive behavioral techniques, time-out, token economy	Temper outbursts	multiple baseline across settings	Weekly frequency	Outbursts decreased to zero occurences in both settings
FUNCTIONAL ASSESSMENT								
Functional assessment in a residential setting: identifying an effective communicative replacement response for aggressive behavior	Bailey, McComas, Benavides & Lovascz (2002), *Journal of Physical and Developmental Disabilities*	A 24 yr old male with profound MR	Group home	Functional analysis indicating attention followed by FCT	Aggressive responses	Multielement	Frequency per minute	21.2 times per month prior to tx, 1.4 times per month following tx
Assessment and treatment of low-rate high-intensity problem behavior	Kahng, Abt, & Schonbachler (2001), *Journal of Applied Behavior Analysis*	A 15 yr old female with profound MR	Inpatient unit	Functional analysis indicating attention followed by DRO	Aggressive acts	ABAB	Frequency of aggressive acts	81% decrease in aggression compared to baseline
The evaluation and treatment of aggression maintained by attention and automatic reinforcement	Thompson, Fisher, Piazza & Kuhn (1998), *Journal of Applied Behavior Analysis*	A 7 year old male with severe MR	Analogue	FCT (picture communication card to gain attention) plus extinction	Aggressive acts	ABAB	Frequency of aggressive acts: responses per minute	Aggression from mean of 1/min to 0.07/min. Appropriate responses to 0.97/min